CELCON® M15HP

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Celcon® acetal copolymer grade M15HP is a creep resistant, high viscosity polymer providing optimum performance in injection molding. This grade provides overall excellent performance in applications requiring high stiffness. Chemical abbreviation according to ISO 1043-1: POM

产品信息

树脂鉴别	POM		ISO 1043
制品标识码	>POM<		ISO 11469

流变性能

熔体体积流动速度	1.3	cm^3/10min	ISO 1133
温度	190	°C	
负荷	2.16	kg	
模塑收缩率, 平行	2.3	%	ISO 294-4, 2577
模塑收缩率, 垂直	1.9	%	ISO 294-4, 2577

机械性能

拉伸模量	2800	MPa	ISO 527-1/-2
拉伸屈服应力, 50mm/min	68	MPa	ISO 527-1/-2
屈服伸长率, 50mm/min	16	%	ISO 527-1/-2
弯曲模量	2750	MPa	ISO 178
1%形变时的压缩应力	29	MPa	ISO 604
简支梁无缺口冲击强度, 23°C	280	kJ/m^2	ISO 179/1eU
简支梁无缺口冲击强度, -30°C	220	kJ/m^2	ISO 179/1eU
简支梁缺口冲击强度, 23°C	11	kJ/m^2	ISO 179/1eA
简支梁缺口冲击强度, -30°C	8.5	kJ/m^2	ISO 179/1eA
悬臂梁缺口冲击强度, 23°C	9.5	kJ/m^2	ISO 180/1A
洛氏硬度, M	84		ISO 2039-2
泊松比	0.401		

热性能

熔融温度, 10°C/min	173	°C	ISO 11357-1/-3
热变形温度, 1.8 MPa	101	°C	ISO 75-1/-2
热变形温度, 0.45 MPa	158	°C	ISO 75-1/-2
维卡软化温度, 50°C/h 10N	167	°C	ISO 306
线性热膨胀系数, 平行	110	E-6/K	ISO 11359-1/-2
线性热膨胀系数, 垂直	120	E-6/K	ISO 11359-1/-2

其它性能

吸湿率, 2mm	0.2	%	类似ISO 62
吸水率, 2mm	0.75	%	类似ISO 62
密度	1410	kg/m^3	ISO 1183

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注塑

建议干燥	否	
干燥温度	100	°C
干燥时间，除湿干燥机	3 - 4	h
加工前水分含量	≤ 0.2	%
最优熔体温度	205	°C
最低熔体温度***	205	°C
最高熔体温度	210	°C
螺杆最大切线速度	≤ 0.3	m/s
最优模具温度	105	°C
最低模具温度	90	°C
最高模具温度	120	°C
保压范围	60 - 120	MPa
保压时间 (h表示部件的最大壁厚mm)	2h²-3	s
背压	4	MPa
顶出温度	136	°C

汽车

OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSK-M4D635-A1	Natural & Black
Stellantis - Chrysler	MS.50095 / CPN-4155	Natural

特性

加工方法	注塑, 薄膜挤出成型, 异型材挤出成型, 其它挤出成型, 吹塑, 压延成型, 模压成型
特殊性能	高粘度, 蠕变性能改善

其他信息

注塑

Preprocessing

Drying is generally not required because Celcon® and Hostaform® acetal copolymer materials are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can lead to splay (silver streaking) in molded parts. For better uniformity in molding especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 80 c (180 F) for three hours. Desiccant hopper dryers are not required. Max. water content = 0.35%.

Processing

Standard reciprocating screw injection molding machines with a high compression screw (minimum 3:1 and preferably 4:1) and low back pressure (0.35 Mpa/50 PSI) are favored. Using a low compression screw (i.e.-general purpose with a 2:1 compression ratio) can result in unmelted particles and poor thermal homogeneity. Using a high back pressure to make up for a low compression ratio may lead to excessive shear heating and deterioration of the Celcon material.

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Melt temperature: Preferred range 205-220 C (400-430 F) Melt temperature should never exceed 230 C (450 F).
Mold surface temperature: preferred range 93-121 C (200-250 F) especially with wall thickness less than 1.5 mm (0.060 in.). Wall thickness greater than 3 mm (1/8 in.) may use a cooler (82 C/180 F) mold surface temperature and wall thickness over 6 mm (1/4 in.) may use a cold mold surface temperature as low as 25 C (80 F). In general, mold surface temperatures lower than 82 C (180 F) may produce a hazy surface or a surface with flow lines, pits and other included defects.

Postprocessing

Postprocessing conditioning and moisturizing not required. It may be necessary to fixture large or complicated parts with varying wall thickness to prevent warpage while cooling to ambient temperature.

薄膜挤出成型

Preprocessing

Drying is generally not required because Celcon materials are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can cause surface defects on the extruded film. For better uniformity especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 3 Hrs. at 80 C (180 F). Desiccant hopper dryers are not required. Max. moisture content = 0.35%.

Processing

Standard extruders with a length to diameter ratio of at least 20:1 are recommended. The screw should be a high compression ratio of at least 3:1 and preferably 4:1 to assure good melting and melt homogeneity. The design should be approximately 35% each for feed and metering sections with the remaining 30% as the transition zone.

Melt temperature: 160-220 C (320-430 F)

Postprocessing

Postprocessing conditioning or moisturizing is not required.

型材挤出成型

Preprocessing

Drying is generally not required because Celcon materials are not hydroscopic nor are they degraded by moisture during processing. Excessive moisture can cause surface defects on the extrusion. For better uniformity especially when using regrind or material that has been stored in containers open to the atmosphere, recommended drying conditions are 3 Hrs. at 80 C (180 F). Desiccant hopper dryers are not required. Max. moisture content = 0.035%.

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Processing

Standard extruders with a length to diameter ratio of at least 20:1 are recommended. The screw should be a high compression ratio of at least 3:1 and preferably 4:1 to assure good melting and melt homogeneity. The design should be approximately 35% each for feed and metering sections with the remaining 30% as the transition zone.

Melt temperature: 180-220 C (360-430 F).

Postprocessing

Postprocessing or moisturizing is not required. For thick walled extrusions (>3 mm or 1/8 in.), annealing is recommended to reduce internal stresses.

Annealing temperature: 130-140 C (265-285 F)
Annealing time: 10 min/mm thickness

吹塑

Preprocessing

Consult product information services.

Processing

Consult product information services.

Postprocessing

Consult product information services.

压延成型

Preprocessing

Consult product information services.

Processing

Consult product information services.

Postprocessing

Consult product information services.

模压成型

Preprocessing

Consult product information services.

Processing

Consult product information services.

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加工注意事项

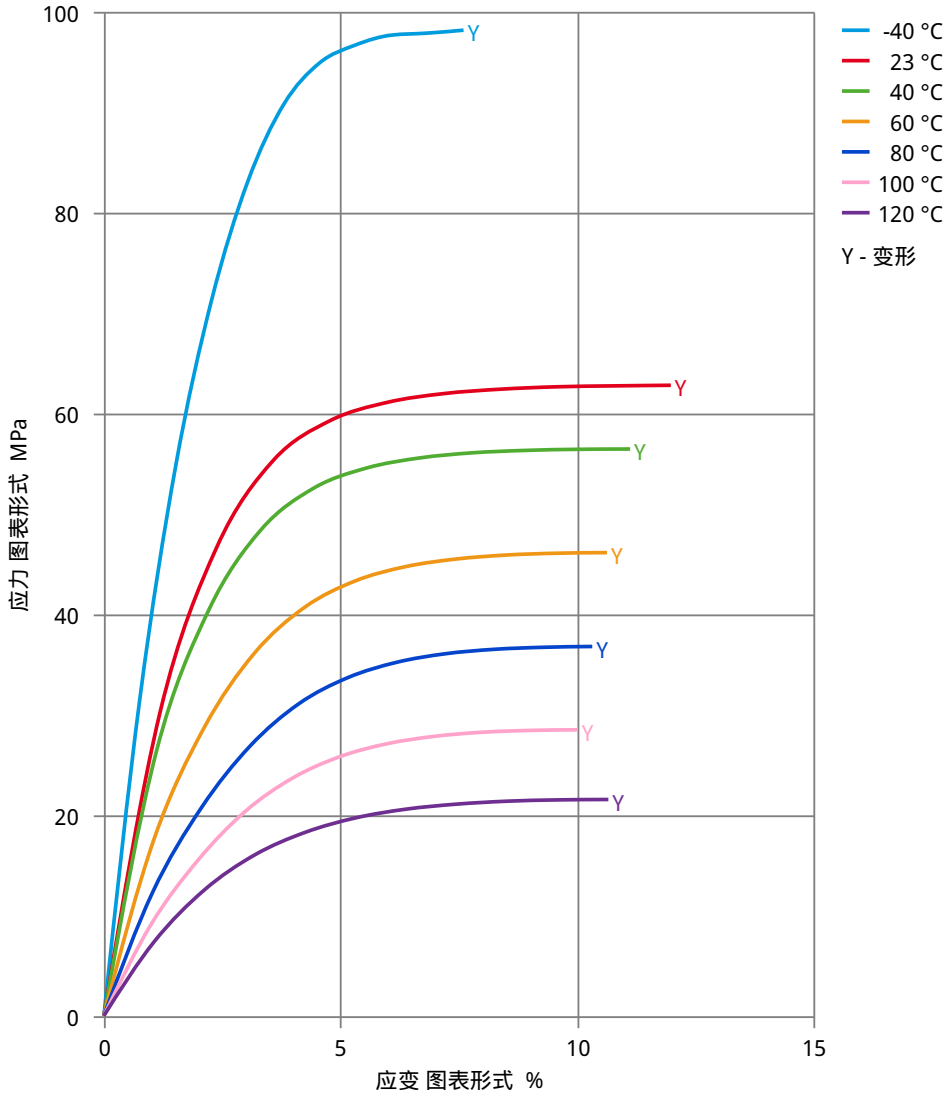
Postprocessing

Consult product information services.

Pre-Drying

Drying is not normally required. If material has come in contact with moisture through improper storage or handling or through regrind use, drying may be necessary to prevent splay and odor problems.

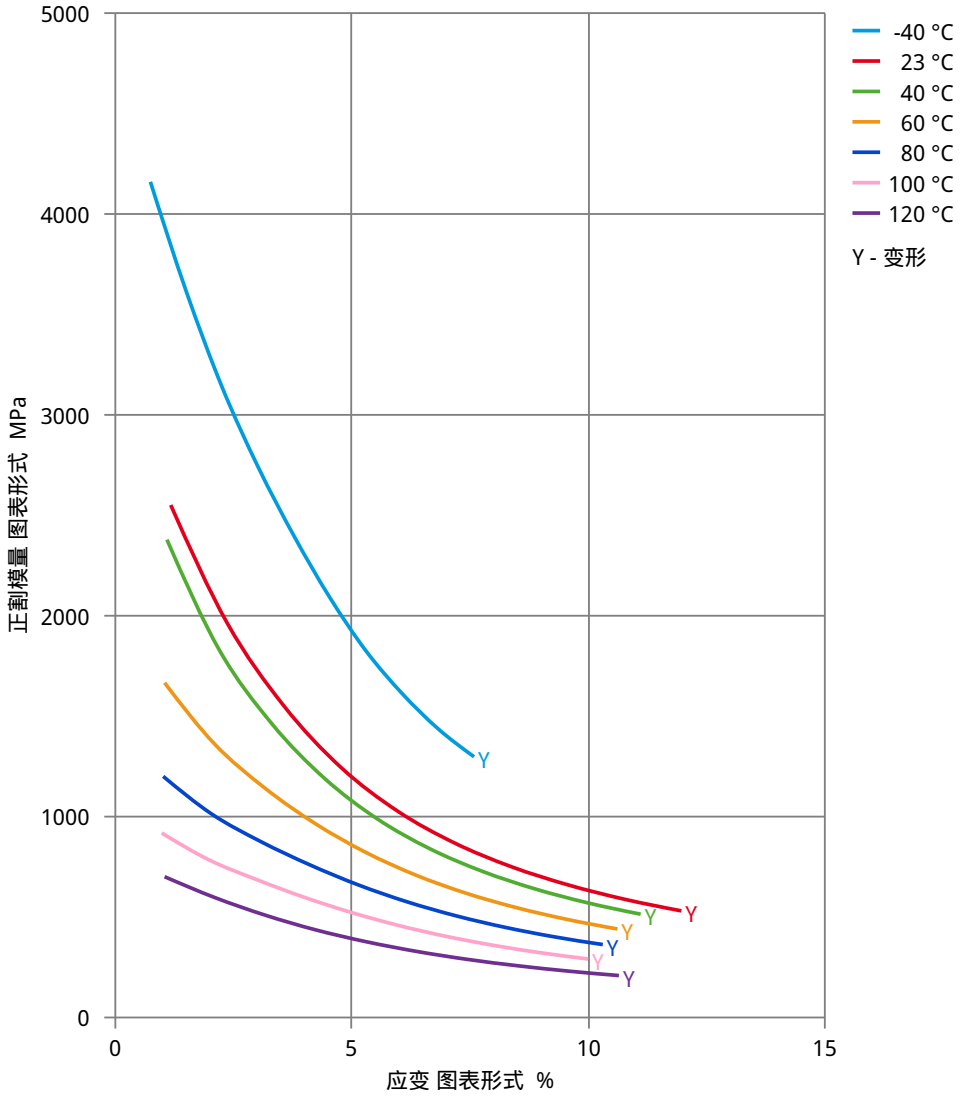
应力 - 应变



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正割模量 - 应变



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